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17. ABSTRACT (MAX. 250 WORDS)

A closed circuit television has been installed for $15,000 that reinforces and expands the entire curriculum. Television is used in most classes only once or twice a month to relate directly to what is being taught at the time, and there is no possibility that all teaching will eventually be done by television alone.

Three qualifications are reviewed before televising each program; it must bring in objects or people not otherwise available; it must teach better than traditional methods; and it must save time and effort.

Scheduling presents no problem, since programs are repeated as often as necessary. Students are allowed to ask questions of the lecturer. After the program, the teacher takes questions and phones them in to the studio where they are screened and consolidated. Programs are limited to one class period.

One televised lesson, on how to use library facilities, reached 2,200 students in two days. Normally, this would have taken more than a month.

It is possible for a single person to operate and teach at the same time. A two-camera telecasting chain of equipment with a console and one student-operated and manually focused camera is used. Buildings have twelve television sets, with one in the studio.

Closed circuit television has helped to break the mold of stereotyped curriculum. Both teacher and pupil response has been enthusiastic.

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HOW TO USE & PROGRAM

A "POOR MAN'S" TV SET-UP

In Plainedge, N. Y., they say you don't have to spend a fortune to get closed-circuit television. For $15,000 they have an installation that reinforces and expands the entire curriculum. Here is a behind-the-scenes account of how it's being done.

■ ■ ■ Last September, the Plainedge, N. Y., junior-senior high school put into operation a "comprehensive" closed-circuit television set-up for a total investment of $15,000. A few weeks ago School Management sent an editor to ask these questions.

- What kind of an installation did you get for this price?
- How is it used?
- How is television scheduled and what kind of telecasts are presented?
- Is a television coordinator necessary?
- Is television a substitute for classroom teachers?

In the following tape-recorded interview, answers to these and other questions are provided by Nicholas C. DeVita, assistant supervising principal, who is general supervisor of television programming; Robert Diamond, television coordinator for the school; and Henry Schwartz, vice president of Shamark Distributors, manufacturers of the equipment in use.

Q. Mr. Diamond, just what are you doing with television in the Plainedge schools? What's your target?

DIAMOND: We are using TV as a teaching tool, not as a substitute for teachers. We want to bring in resources from the outside that otherwise might not be available and make them available to more students. As I said, we are using television as a teaching tool—not as an end in itself. We try to directly relate to the curriculum being taught here in the school—and to improve teaching, as a result.

Q. Is it possible that eventually you might teach by television alone?

DIAMOND: No. In most cases we use television only once or twice a month in a class and then it is used as it directly relates to what is being taught in the class at that time.

Q. Let's nail this down. Are you talking about enrichment?

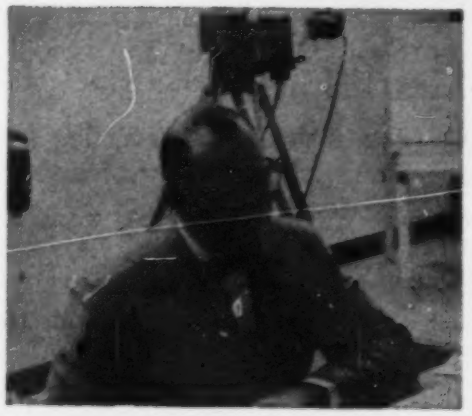
DIAMOND: No. Not necessarily. It

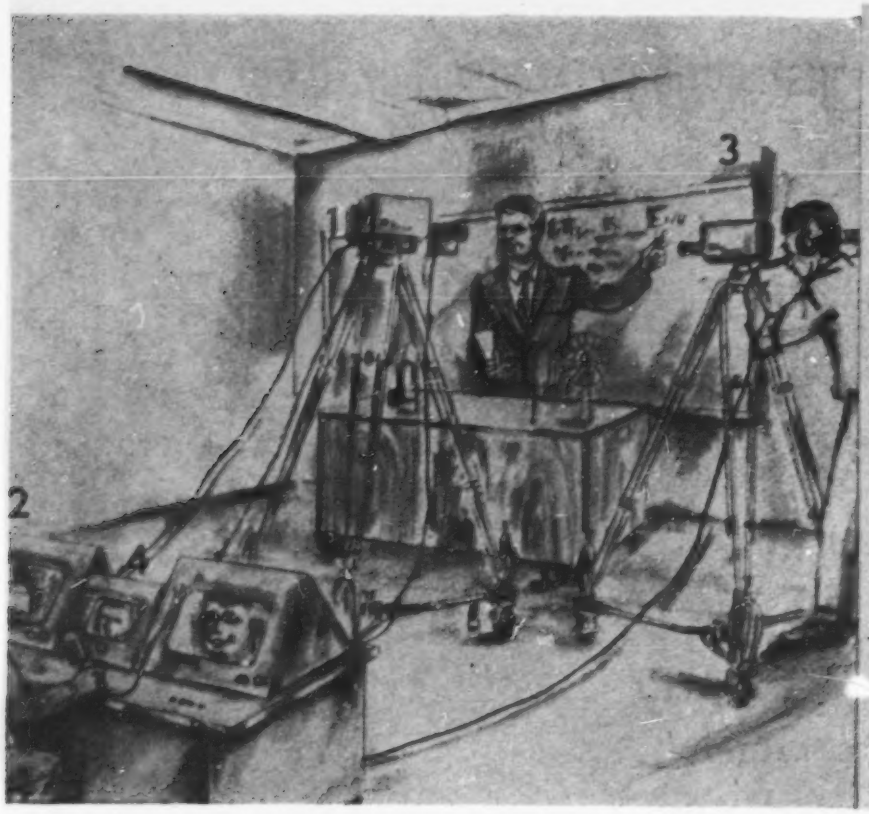
A TAPED INTERVIEW WITH

Nicholas C. DeVita
assistant supervising principal

Robert Diamond
television coordinator

Henry Schwartz
vice president, Shamark Distributors





THE TELEVISION EQUIPMENT USED IN PLAINEDGE

The Plainedge schools are using a telecasting chain consisting of two cameras. One camera (1, see illustration), is totally remoted and can be operated by a person sitting at the control console (2). The camera has a specially constructed Zoomar lens which can be adjusted from 25 mm to 100 mm, providing distance and closeup shots, without an operator having to change lenses as in a lens turret camera. The lens is continually variable from the control console which has remote buttons for operating the pan head and the Zoomar lens.

The other camera (3), is operated by a student who can be directed through a closed audio loop from the control console. He can also watch the picture being sent to receiving sets through a studio monitor. Both cameras are on professional dollies for easy maneuverability.

Each camera is equipped with its own automatic light compensator, eliminating the need for manual adjustments in differently lighted areas. The compensator is adjusted

does enrich, but it ties in directly with the syllabus of the courses.

Q. Does this mean in any way that your television programs are actually an extra added attraction that really are not vital to the school program?

DIAMOND: There are three things that we try to do in our programs. And unless at least one of these is true we won't do it. First, a program has to bring in things or people that otherwise would not be available. Second, it must teach better than traditional methods can. And third by using television, we must be able to save time and effort. An example of that is our library orientation program. We televised from the library to the school and in two days we showed all 2,200 students how to use the library facilities. Normally this would have taken more than a month with one class at a time going up to the library. Now, to answer your question, we didn't need TV to do this job, but with TV we did it faster and better.

Q. You mentioned telecasting from the library. Don't you telecast from a television studio?

DIAMOND: Well, thanks to the flexibility of the equipment—along with its simplicity—we can televise from any room of our building to any room of our building. We can televise within a single room. For instance, the biology department did a dissection of a frog. The teacher in the front of the room did the dissection and operated the TV equipment entirely himself. We had four receivers set around the room and the students followed the procedure step by step, by watching the television screen while the teacher was in the front of the room describing what he was doing.

Let's assume that in any typical biology lab the instructor is to give a demonstration of the dissection of a frog. Under ordinary circumstances, a group of six, or possibly eight, students would be called to the front table while the instructor demonstrated what it was he was talking about. This means that if there are 24 students in the class, the instructor must repeat this demonstration three times so that every student could clearly see the demonstration. Then the student must go back to his table and try to do the dissection himself from memory.

Now, putting the students back at their own work tables and moving in three or four TV receivers, the instructor can work at his own table with the TV camera. He can now do one dissection and each student actually has a front row seat at his own desk. He now has the advantage of doing the dissection as the instructor does it. Also, the picture that we have on the screen is greatly enlarged . . . the teacher has a set of controls so the camera can come in close on any particular part of the operation that he wants to show.

Q. Is it possible for a single person to operate and teach at the same time?

DE VITA: Yes—with absolutely no loss of efficiency. The TV camera helps him. For example, an ordinary frog is four to five inches long. Say he wants to illustrate the dissection of the lungs of the frog. They will probably be about a half-inch long. Now it is possible for him, using a Zoomar lens on his camera, to show the entire frog on a 21-inch screen, automatically bringing it up to four times the original size. Then he can take the lungs, which are only a half-inch long, and almost cover the entire screen with just this one vital organ of the frog. He does this simply by pushing a button and moving the camera in on the lung itself.

Q. You have mentioned a Zoomar lens and previously Mr. Diamond spoke of the flexibility of your equipment. Obviously this is an important part of your program. What kind of equipment are you using?

SCHWARTZ: Basically, the equipment supplied is a two camera tele-

so that it can be used under ideal (studio) or poor (classroom) lighting conditions.

The control console is the heart of the equipment. It is built in two sections which can be split. Each section houses its own generator so that if, in the future, Plainedge wants to install a second closed-circuit channel in the school, it could be done with this same equipment. The student operating the console has before him monitors showing exactly what each camera is seeing. He can select which shot he wants to put "on the line" (on the air) and can make adjustments for maximum viewability.

A small monitor (4) in the center of the console shows exactly what has been put "on the line".

The equipment (a vidicon camera chain using 2:1 interlace), is built so that it can be student operated and maintained.

Cost of the equipment

There are three basic components to the telecasting system: originating equipment, receiving equipment and the distribution system necessary to get the sound and picture from the console to the rest of the school.

The originating equipment is available for $9,500. The receiving equipment costs $3,220 and the distribution system for 25 rooms, excluding receivers averages around $1,800. Allowing for lighting and any other equipment that may be necessary in special situations, the cost of the complete system, exclusive of receivers should not exceed $15,000. Standard TV receivers can be used with the equipment, or districts may purchase specially constructed sets which sell for $322 each.

The manufacturer of this equipment has recently instituted a rental plan making it possible for schools to obtain a television system on a rental basis for three years, each year paying one third of the cost of the equipment, (in this case $5,000) plus a service charge. At the end of three years the school can buy the system for 10% of its original cost ($1,500).

For more information on this television equipment, circle number 868 on the Reader Service Card.

casting chain of equipment with a control console *(see box, above)*. One camera is student operated and is manually focused. The other camera is totally remote controlled—that is to say it can be operated by the person at the control console. This remote camera can be moved from left to right, up or down, and has a vari-focal Zoomar lens on it. With this lens, any subject material can be brought in to fill the entire screen of the television receiver.

The control console is the heart of the equipment. I repeat, it is student operated. From the console, the student can select which camera picture will be placed on the line and sent to the receiver sets. He can adjust either of the two pictures. He can direct the operator of the manual camera as to where to point his camera and how to take the picture. He can operate the remote camera so as to move it in any direction. And he can select the various brightnesses and contrasts in the picture so that it arrives at proper distribution throughout the school.

Q. All this is done by a student?

SCHWARTZ: The simplicity of the controls that are made available to the student helps. We have it down to the point where there are only two knobs for each camera unit. A student can learn to operate the console with a minimum of training.

DIAMOND: I would like to mention that the students we use are not necessarily the scientifically inclined. They have been picked for dependability, and for grades, so that the time they spend in here has not taken away from their studies. We have three students—boys and girls—working with me during each period of the day. When we are telecasting one will usually be on the hand-operated camera. One will be on the control console. The third is a standby. These students are also responsible or making sure that the TV sets are where they are supposed to be when they are supposed to be there and that they are operating properly.

Q. Are these students paid?

DIAMOND: No. This is a student activity. You might call it a club. But it is a little more active than most clubs. Incidentally it's a tremendous learning experience for them, too.

Q. How many TV sets do you have?

DIAMOND: We have 12 in the building, plus a small one sitting in the studio. They are regular 21-inch receivers which are on a specially designed base on wheels. The receivers are standard commercial equipment. We telecast over Channel 6 because, in our area, Channel 6 is not broadcast. There is no interference from an outside source. Therefore, the sets receive what would normally be Channel 6 through our closed-circuit television installation.

Q. No one outside the school can pick up your Channel 6?

DE VITA: No, there is no real broadcast as such. Our circuit is closed. We simply use Channel 6 as a setting.

Q. You have 12 television receivers. These, I gather, are moved from room to room. Is 12 sufficient to cover your whole school?

DE VITA: Not always. We have had certain programs where we have needed more than 12 sets. I think that, in time, we will get more receivers.

SCHWARTZ: The administration here has felt the need for a larger screen and more highly qualified receivers. So my firm has designed a receiver which will be used when the number of sets is increased. Plainedge does not have these receivers now because they were not developed at the time this plan went into operation.

Q. With a limited number of sets then, scheduling must be something of a problem.

DE VITA: Let me say this. In a single day, we have reached as many as 1,600 students in their classrooms. We repeat programs as often as

"Our television equipment has been custom designed to fit our philosophy of education and not the other way around."
De Vita

Control console is handled by a student engineer who monitors pictures from both cameras and selects one to put on line. Small monitor in center shows picture classrooms are seeing. Button panel at left is used to select rooms to which sound will be sent over public address system.

necessary. It's a little tiring on the people doing the telecasts, but it is the only way we can handle it. We can't afford to tape our programs yet.

Q. When you repeat these programs, do you change them to suit different audiences?

DIAMOND: That would depend on the situation. If somebody was making a presentation on some point of physics, for example, he would certainly present different material to a freshman class in general science than he would to a senior physics class. But if each time he was on the air he was telecasting to classes in general science, then he would not change his presentation.

Q. So, when someone is telecasting to different groups, he changes his program to fit each group?

DIAMOND: Again I have to hedge on that. Here is another example, where the same program was used by two entirely different classes. We invited two politicians to come in and hold a debate. Classes in the citizen education department used the debate to study current affairs and democracy in action. At the same time some English classes were watching the same program—not for the content so much as for the way it was being presented—the jargon used by politicians. They were using the telecast as a lesson in public speaking.

Q. You apparently move your equipment around quite a bit. Is this a major task?

DIAMOND: No! We have moved our entire chain of cameras into another room in less than 15 minutes.

Q. How about the breakability or sensitivity of the equipment? Is this equipment manufactured with an eye toward a beating?

SCHWARTZ: No equipment is manufactured with an eye toward a beating. There is special equipment that will take rough handling but you don't use that in school—the kids aren't that rough. But this particular equipment is designed so that it stands up very well. The school has had only a $63 service charge in the last seven months.

Q. Is there any danger working with these sets? Could a child get a bad shock?

DE VITA: Any student who works on a television set must be aware of the various dangers that exist in handling either a school television set or a receiver at home. There's no more danger than at home.

Q. How do you handle programming and scheduling? This is a major problem in any school situation. Who administers it?

DIAMOND: Let me trace a program from its inception. The first thing that happens is that a teacher or a department head will come to me and say that they have an idea for a certain type of program. At this time I start asking questions. I ask if it applies directly to a specific part of the curriculum and the outline of the course. If that answer is yes, then we know that it is applying to our philosophy. The next question will be, "if we televise the program, will it reach a large number of students?" From a practical point of view, it is important that several teachers in the department be on the same subject at exactly the same time. We want a maximum return for our efforts.

Then we sit down with the department head or with several teachers, and find out what they want—exactly what is to be covered in this program. I ask them what resources they would like. I will ask who they think can do this program. They may have suggestions or I will suggest something. Then I'll get in touch with these people. Let's say we think someone at IBM could help us. I call them and they say they would be happy to cooperate with us.

The people from their educational unit in New York will come out and meet with the people who want IBM to do a program. Our teachers come to these meetings with the following information: the objective of the program; what they want covered and a specific time that they want,

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Television

continued from page 54

say within a week. If IBM cannot do exactly what we want, we say thank you very much and that's it. If they can do it, about three weeks later they give us an outline of what will be included in the program. We sit down and go over this outline applying it against the yardsticks. Is this exactly what we want? If it isn't, we'll drop the program.

We are continually molding the program into exactly what we want. After this is done, we send out a bulletin to all of the teachers who will use the program. In it is included the person coming, the date, the objective and the content as it relates directly to the class itself. Included in this outline also are preprogram activities that we think the teachers should undertake so as to get the most use of it—written words, vocabulary, certain materials that should be available.

In other words, each program is as complete a package as possible, and has been molded at the teachers' request to do exactly what they want us to do.

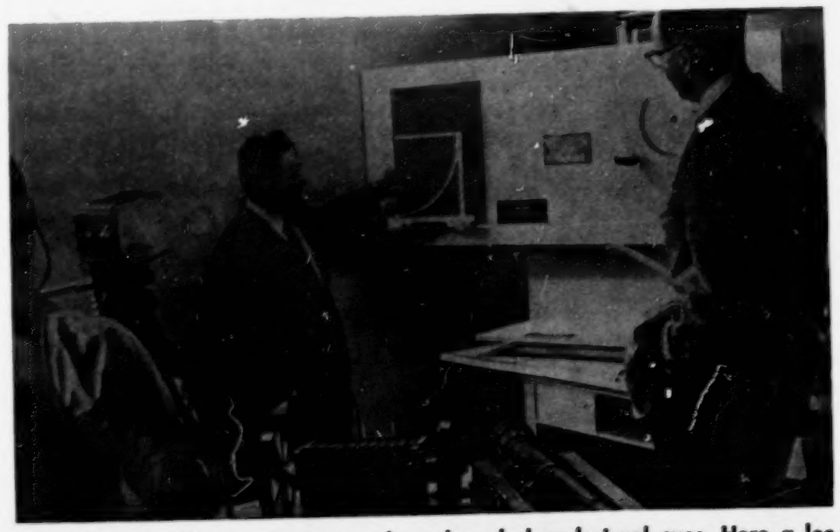
Q. Could a department head handle this job or is it necessary for a school undertaking a program like yours to have a coordinator or a television director?

DIAMOND: You've asked me to defend my job. Naturally, I think it's necessary. I'm a middle man. I work more on some programs than on others. If a school system is able to find an individual who wants to take all of the details under his own control, and who knows the medium, it is possible to do the job with the existing teaching and administrative staff. However, we find that it is much more efficient and more convenient for one individual to tie the package together. It is a time-consuming job. For instance, in January we had programs booked through the end of May. We have to work very far in advance. You have so many different ends to tie together. I would much rather have the teachers worry about the content of the program and let me handle the logistics.

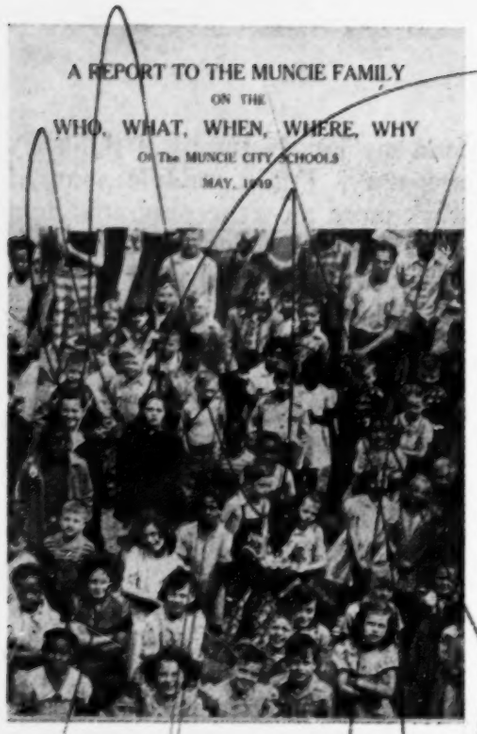
Q. Is your television in use all the time?

DIAMOND: No. Right now we are on almost every day, but we may only program two periods a day. We are not as much interested in completely filling up a program schedule as in having our programs do exactly what we want them to do.

Q. Your television sets are not in use now. Suppose President Eisenhower walked in. Would you be able to put him on the air?



Speaker can direct cameraman through verbal and visual cues. Here a lecturer points to exhibit and camera follows his hand. Television Coordinator Diamond *(right)* is available in case there are technical or other problems.



This was Muncie's first pamphlet.

their "right to know" what the schools were doing.

As the program developed, the publications began to contain less text and more pictures of "the Muncie family and its schools." The booklets are distributed during public events at the schools and, because of their photo content, are sought by students as souvenirs. Muncie newspapers occasionally reprint sections to give the school story wider distribution.

On annual Education-Industry-Business day, when teachers tour the factories of industrial Muncie, and industry representatives tour the schools, photo booklets which record the event are distributed to workers in all the plants which take part. These booklets are co-sponsored with Muncie's Chamber of Commerce.

Cost of the program has been negligible. All publications are printed in the high school print shop, they are written by teachers, and sometimes by parents, with pictures and art work by high school student photographers and artists. Booklet editor is Kathleen Meehan, veteran high school English teacher who last year was chosen Muncie's "Woman of the Year."

Muncie's school administration attributes its successful growth in the past nine years to community spirit, and the community spirit to the booklet program. **End**

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is touching on a subject that is being televised for the high school English department. She might find the program very useful. Would she be able to get in on it?

DE VITA: She would not, if the effect of the program would be entertainment. But let me put it this way. If it is something for the English department, the whole English department will know about it beforehand. Many of our teachers teach more than one subject, of course. They have a good idea of what is coming. We have bulletins going out all the time telling the whole school what programs are planned.

DIAMOND: If a telecast will really aid a teacher, she can use it. But I think one of the things you were leading to before was a problem which we will always face when we use any kind of audio or visual aids. We must prevent, or secure as much as possible against, the possibility that this will be used for entertainment purposes alone. As a matter of fact, one part of my job is to make sure that the program is going only to classes where it applies. I have deleted certain classrooms because, in checking through, I have found that there was no strict relationship to what was going on in that class.

Q. You have student operators of the television equipment. Do they need a great deal of training?

DIAMOND: Virtually none. My students were here for one day and in that day they were doing a program. Our programs are produced as simply as possible. There will be exceptions, however. Say the English department is doing a program on Shakespeare—that will have to be worked out because we will have a large cast. We almost work on an ad-lib basis. It is impossible for us to have the high caliber of finished production that you do in a studio.

Q. Can you trust the judgment of this student engineer, in effect, to decide what is the best subject picture?

DIAMOND: We don't have to.

Q. How do you avoid that?

DIAMOND: One way is that I will be in there, standing behind the engineer. In other cases, the person on television will verbally indicate the picture he wants. He may, for example, say "now here we have a map of the area," and the camera

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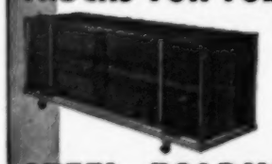

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"Television must fit Plainedge's courses. The courses will not be changed for the sake of television." **Diamond**

DIAMOND: This is an extreme case. For an assembly program, I might say yes. But normally I would say no, and I would say it very emphatically, for the simple reason that our programs must tie in exactly with what is being taught in a specific course at a specific time. For instance, we've had this happen: a program was supposed to be on last Wednesday but the person called and said he couldn't make it. He wanted to come in next week. The program was killed. Why? Because next week it would not apply to what was being taught in that class and we will not change our courses to suit television. Television must suit our courses. Television does not determine the teaching. Teaching determines the use of television.

Q. One other question on programming. How do you schedule during the day so that you can reach most of your people?

DIAMOND: Let me give you an example. We have a group coming from the Japanese consulate. They will stay the whole day but they will do only five programs. I sent out a bulletin to all teachers and said "those of you in the area that we are covering who want to use this program, please indicate the hours you can use it." I then took the five periods during the day when the largest number of classes wanted to use the program. It was completely black and white and that was it. We usually try to get the period that will hit most classes.

Q. Do all of your teachers know what programs are being televised in any one day?

DE VITA: In most cases, no. Only those in the department for which the program is being televised know about it.

Q. Suppose unbeknownst to you, the seventh or eighth grade teacher will move to the place he has indicated.

Q. On all programs?

DIAMOND: It depends on the program. For instance, we're going to have an animal program tomorrow. I will be there during the whole program. I will have to be. For a simpler program that isn't necessary. The student is continually following the main action. He knows when he has a good picture. We have intelligent students here who for the most part are very capable of picking the better picture.

Q. Do you screen your guests or your teachers for their theatrical abilities?

DIAMOND: No. As far as the guests go, we try to select them as carefully as possible. ESSO, for example, is doing quite a few programs for us. The woman who handles this for ESSO is the head of their educational department and she is working together with us hand in hand. She knows who is good and who isn't. She's hand picking the people who are coming out to do our program.

Q. How about your own teachers—do you do any training . . . do you take them aside and show them how to use their best profile?

DIAMOND: No. We don't use make-up or anything like that. But we now have a workshop in television for teachers to show them how they can best use the medium.

Q. Do you ever use television for a straight voice lecture where a man is not using exhibits?

DIAMOND: No. We could use the public address system. We use television only when it's the best medium. And for just straight talking it isn't. Incidentally, we use the regular P.A. system to carry our sound. It was done that way for expediency and, of course, a saving of money. We have the central control in the studio room. We can pick the rooms that our sound goes out to. We also have a unique phone intercom system in the building which makes it possible for students to phone questions in to the person who is making the television presentation.

Q. Students can ask questions of lecturers? How does this work?

DIAMOND: Let's say we have a guest in. He will talk for approximately 20 minutes. We will then stop the program and give the teachers in the rooms time to take questions from the class. Each room has a telephone. Whoever happens to be near the phone, calls the questions in and I screen them. We could give them directly to the person who is on TV, but, if we have a good program going, we will have far more questions that we can use. Also, many of the questions can be combined in a single question—and some, of course, are unimportant.

Q. Do you limit the speakers as to how long they can speak? Do you try to avoid the long lecture that runs into two periods?

DIAMOND: We don't allow that. A program can't go longer than a period to begin with. When the cameraman signals him to stop, he just cuts where he is. But we're experimenting. We're trying to avoid categorical limits.

DE VITA: I'll add this: I don't know how far we'll go or where we'll end ultimately. I do know we've already progressed far enough to justify our investment. We've started to break the mold of stereotyped curriculum, and the teachers and the children can feel it. **End**

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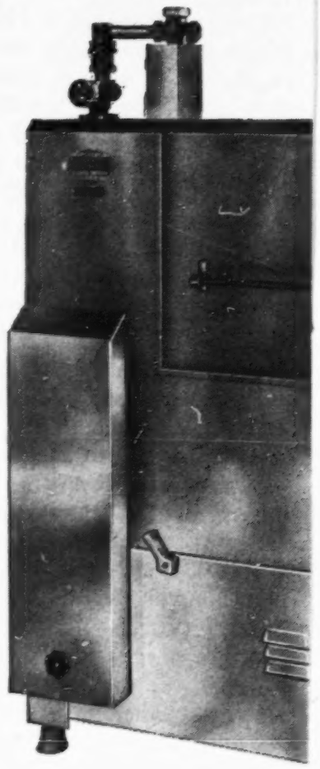

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